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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,416	11/16/2001	Martin Thomas Miller	455610-2420	8540

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EXAMINER	
WEST, JEFFREY R	
ART UNIT	PAPER NUMBER
2857	
MAIL DATE	DELIVERY MODE
12/10/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/988,416	MILLER ET AL.	
	Examiner	Art Unit	
	Jeffrey R. West	2857	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 November 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,4-6,11,13,43,44 and 50-55* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,4-6,11,13,43,44 and 50-55* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 July 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/19/08 and 11/05/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 13 and 50-55 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,884,228 to Stanley et al.

With respect to claim 50, Stanley discloses a method for configuring and performing processing in a digital oscilloscope of a type having plural operating elements for data flow processing of input data (column 3, line 61 to column 4, line 4), said method comprising the steps of: defining a processing web having plural processing elements, each processing element of the processing web corresponding

to one or more of the operating elements of the digital oscilloscope (column 2, line 63 to column 3, line 11, column 3, line 61 to column 4, line 4, and column 4, line 56 to column 5, line 10); providing an additional processing element for use with the processing web upon the addition of a corresponding operating capability to the digital oscilloscope (column 6, lines 3-18), said additional processing element having at least one input pin and at least one output pin (i.e. pins that plug into a chassis to receive input and output data) (column 4, lines 5-15); and including the additional processing element in the processing web, thereby incorporating the corresponding additional capability into the data flow processing by the digital oscilloscope (i.e. enabling communication between the additional processing element and the main processor) (column 2, lines 29-34), by connecting one or more of said input and output pins of the additional processing element to the processing web (i.e. connect the pins of the additional processing element with the other processing elements through backplane wiring of the chassis) (column 4, lines 8-12).

With respect to claim 13, Stanley discloses wherein at least one of said plural processing elements receives M inputs on an input pin and produces N output results on an output pin, where M is an integer equal to or greater than 1 and where N is an integer equal to or greater than 0 (column 4, lines 62-65).

With respect to claim 51, Stanley discloses further comprising the step of removing a processing element from the processing web upon the removal of a corresponding capability from the digital oscilloscope (column 6, lines 3-7).

With respect to claim 52, Stanley discloses wherein the additional corresponding capability is provided by the addition of one or more hardware elements to the digital oscilloscope (column 6, lines 3-7).

With respect to claim 53, Stanley discloses wherein the additional corresponding capability is provided by the addition of one or more software elements for the data flow processing by the digital oscilloscope (column 6, lines 7-10).

With respect to claim 54, Stanley discloses wherein the processing web is generated dynamically upon startup of the digital oscilloscope (column 5, lines 11-19, column 6, lines 11-18, and column 7, lines 18-32).

With respect to claim 55, Stanley discloses wherein changes to a configuration of the digital oscilloscope are manifested in the dynamically generated processing web (column 5, lines 11-19, column 6, lines 11-18, and column 7, lines 18-32).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2, 4-6, 11, 13, 43, 44, 50, and 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over National Instruments, "Computer-Based Instruments: NI 5911 User Manual Digital Oscilloscope for PCI" (hereafter "NI 5911") in view of

National Instruments, "NI-SCOPE Instrument Driver Quick Reference Guide: Easy Programming for National Instruments Oscilloscopes" (hereafter "Reference Guide") and U.S. Patent No. 5,301,336 to Kodosky.

NI 5911 discloses a digital oscilloscope (page 1-1) that is graphically programmed according to the "NI-SCOPE Instrument Driver Quick Reference Guide: Easy Programming for National Instruments Oscilloscopes" (page 1-3) by accepting input parameters (page 1-4) and processing an inputted waveform accordingly to provide a corresponding display (pages 1-5 and 2-9 – 2-11), based on configuration data inputted dynamically upon startup to generate a processing web wherein changes to a configuration of the digital oscilloscope are manifested in the dynamically generated processing web (pages 1-4 – 1-6), but does not describe the corresponding graphical programming.

With respect to claim 50, Reference Guide teaches a method for configuring and performing processing in a digital oscilloscope of a type having plural operating elements for data flow processing of input data, said method comprising the steps of: defining a processing web having plural processing elements, each processing element of the processing web corresponding to one or more of the operating elements of the digital oscilloscope (pages 3, 7, and 8, configEdge, READMEAS, FETCHSTATS, FETCHMEAS); and selectively including an additional processing element in the processing web, thereby incorporating the corresponding additional capability into the data flow processing by the digital oscilloscope, by connecting one

or more of inputs and outputs of the additional processing element to the processing web (Figure, page 8).

With respect to claim 2, Reference Guide teaches wherein at least two of said plurality of processing elements are updated at different speeds (i.e. READMEAS is updated based on the acquisition speed (maxTime) and FETCHSTATS is updated based on a result of the READMEAS and is therefore inherently slower).

With respect to claim 5, Reference Guide teaches wherein said at least two of said plurality of processing elements are idle when not updated (i.e. only executed to perform processing when new data provided) (pages 3-5, 7, and 9, configEDGE, READMINMAX, FETCHMINMAX, READMEAS, FETCHSTATS, FETCHMEAS).

With respect to claim 6, Reference Guide teaches wherein one of said at least two of said plurality of processing elements is of a cumulative type running at a first speed, and another of said at least two of said plurality of processing elements is of a non-cumulative type running at a second speed, and wherein the first speed is higher than the second speed (i.e. EASYACQUIRE, TIMEBASEACQUIRE, etc. cumulatively acquire data while READMINMAX, FETCHMINMAX, READMEAS, FETCHSTATS, FETCHMEAS are non-cumulative and since they depend on the acquired data, inherently run at a speed slower than the cumulative processing) (pages 1, 4, 5, 7, and 8).

With respect to claim 11, Reference Guide teaches wherein one of said plurality of processing elements requests data from an upstream source when data is requested from it by a downstream processing element (i.e. when FETCHSTATS is

executed it requires measurement data to be processed and thereby requests READMEAS to process a waveform in order to provide FETCHSTATS with the required measurement data as a result of the fetch -page 7, READMEAS and FETCHSTATS- and repetitively performs acquiring processing based on a request to fetch more data –Figure, page 8).

With respect to claim 43, Reference Guide teaches wherein less than all of said processing elements have update inputs activated to process the data received thereby (i.e. Repetitively Acquiring Data processors performing continuous acquisition while Fetch More Data processors updating when commanded) (pages 4, 7, and 8, NISCOPE INITIATE, NISCOPE ABORT, and NISCOPE READ, READMEAS and FETCHSTATS, and Figure) and wherein at least one of said plurality of processing elements having an update input responds to the activation of said update input to request processing from an upstream one of said plural processing elements that does not have an update input and that is idle until receipt of said request, so that upon said request, the upstream processing element performs said request processing to process a received data, and provide the processed data to the at least one requesting processing element (i.e. when FETCHSTATS is executed it requires measurement data to be processed and thereby requests READMEAS to process a waveform in order to provide FETCHSTATS with the required measurement data as a result of the fetch) (page 7, READMEAS and FETCHSTATS).

With respect to claim 44, Reference Guide teaches wherein the upstream one of said processing elements transmits the processed data to the at least one of the plurality of processing elements requesting processed data therefrom without an intervening buffer (Figure, page 8).

It would have been obvious to one having ordinary skill in the art to modify the invention of NI 5911 to include the corresponding graphical programming, as taught by Reference Guide, because Reference Guide suggests the corresponding programming required to carry out the programming in NI 5911 in a manner that would have reduced the burden of the user by employing an easily discernable graphical interface.

With respect to claim 4, NI 5911 teaches processing elements to display a processed waveform and Reference Guide teaches processing elements that operates at an acquisition speed. Further, since Reference Guide teaches that the data to be displayed, such as statistical data, is updated based on a result of periodically processed measured data, it is inherent that any resulting display speed must be slower than the acquisition speed.

As noted above, the invention of NI5911 and Reference Guide teaches many of the features of the claimed invention and while the invention of NI5911 and Reference Guide does teach selectively including an additional processing element in the processing web, the inclusion of an additional processing element is by adding an element that has previously been available rather than providing an additional

processing element upon the addition of a corresponding operating capability to the digital oscilloscope.

Kodosky teaches a graphical method for programming a virtual instrument comprising means for defining a set of instructions input by a user to be associated with one or more processing elements of the instrument, based upon one or more input parameters (column 9, lines 58-64 and column 32, line 48 to column 33, line 16), to enable said processing elements to carry out said instructions and perform processing on the received input signals within the instrument upon application of the associated processing element (column 33, line 66 to column 34, line 13), assigning a graphical representative for each said processing element (column 32, lines 5-7 and column 33, lines 19-25), coupling one or more of the received input signals to one or more processing element graphical representatives (column 31, lines 13-18 and column 34, lines 2-13), and connecting respective ones of said processing element graphical representatives to define and graphically depict a processing web for performing corresponding processing on said one or more received input signals within said instrument (column 34, lines 1-16 and Figure 74) wherein an additional processing element for use with the processing web is provided upon the addition of a corresponding operating capability to the digital oscilloscope through the addition of a processing element including one or more software elements for the data flow processing (column 30, lines 26-42 and column 32, lines 23-58), wherein at least one of said plural processing elements receives M inputs on an input pin (i.e. terminal) and produces N output results on an output pin,

where M is an integer equal to or greater than 1 and where N is an integer equal to or greater than 0 (column 31, lines 13-56).

It would have been obvious to one having ordinary skill in the art to modify the invention of NI5911 and Reference Guide to specifically include providing an additional processing element upon the addition of a corresponding operating capability to the digital oscilloscope, as taught by Kodosky, because, as suggested by Kodosky, the combination would have improved the system of NI5911 and Reference Guide by providing the ability to provide new user-generated additional processing capability thereby increasing the applicability of the device by allowing the user to customize the number processing functions (column 30, lines 26-42 and column 32, lines 23-58).

6. Claims 51 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over NI 5911 in view of Reference Guide and Kodosky and further in view of U.S. Patent No. 4,884,228 to Stanley et al.

As noted above, the invention of NI 5911, Reference Guide, and Kodosky teaches many of the features of the claimed invention and while the invention of NI5911, Reference Guide, and Kodosky does teach providing an additional processing element for use with the processing web upon the addition of a corresponding operating capability to the digital oscilloscope, the combination teaches such an addition based on the addition of one or more software elements to

the digital oscilloscope rather than the addition/removal of one or more hardware elements.

Stanley teaches a flexible instrument control system comprising means for providing additional operating capability of an oscilloscope (column 2, lines 48-52) wherein the additional corresponding capability is provided, or removed, by the addition/removal of one or more hardware elements to/from the digital oscilloscope (column 6, lines 3-7) and/or one or more software elements for the data flow processing by the digital oscilloscope (column 6, lines 7-10).

It would have been obvious to one having ordinary skill in the art to modify the invention of NI 5911, Reference Guide, and Kodosky to specify that additional corresponding capability is provided by the addition of one or more hardware elements to the digital oscilloscope, as taught by Stanley, because, as suggested by Stanley, the combination would have improved the system of NI 5911, Reference Guide, and Kodosky by allowing for the addition of both hardware and software elements thereby increasing the overall flexibility and, consequently, applicability by allowing for the inclusion of a greater number of processing functions (column 1, line 49 to column 2, line 18 and column 6, lines 3-10).

Response to Arguments

7. Applicant's arguments with respect to claims 2, 4-6, 11, 13, 43, 44, 50-55 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure:

U.S. Patent No. 5,736,971 to Shirai teaches a method and apparatus for increasing resolution of a computer graphics display including a display controller for connection to a CRT (column 5, lines 12-15) that receives data inputs through at least one input pin (i.e. pin connector CN1) (column 5, lines 34-45), produces outputs through at least one output pin (i.e. pin connectors CN2-CN4) (column 5, lines 4-6), and receives controlling instructions through a processor at a pin (i.e. pin connector CN1) (column 4, lines 43-49).

University of Illinois at Urbana-Champaign "Experiment 3B *LabVIEW Graphical Programming*" describes operation of LabVIEW using a graphical programming language that includes icons/buttons representing components that are connected with wires to control flow of the program.

U.S. Patent No. 4,809,189 to Batson discloses a method for configuring and performing processing in a digital oscilloscope processing apparatus (column 2, lines 13-14), comprising the steps of receiving one or more input parameters (column 4, line 56 to column 5, line 8 and column 19, lines 16-33), defining a plurality of processing elements based upon said received one or more input parameters (column 18, line 53 to column 19, line 33, column 19, lines 38-68 and column 20, lines 43-48) and connecting said plurality of processing elements to define a processing web (column 4, lines 14-56 and Figure 1), wherein at least one

of said plurality of processing elements requests processing from an upstream one of said plurality of processing elements so that upon said request, the upstream processing element performs said requested processing to provide required data to the at least one processing element (i.e. the display controller requests the memory management unit "14" to process memory access communications to control access to memory banks in the waveform memory "16" and returns the required data, as part of a read access communication, from waveform memory back to the display controller) (column 5, lines 9-29 and 51-65 and Figure 1).

U.S. Patent No. 6,570, 592 to Sajdak et al. teaches a system and method for specifying trigger condition of a signal measurement system using graphical elements on a graphical user interface.

U.S. Patent No. 5,953,009 to Alexander teaches a graphical system and method for invoking measurements in a signal measurement system.

U.S. Patent No. 5,920,479 to Sojoodi et al. discloses a method for configuring and performing processing in a digital oscilloscope (column 1, lines 60-67) comprising the steps of receiving one or more input signals by the digital oscilloscope (column 3, lines 10-21 and column 13, lines 51-67), receiving one or more input parameters by the digital oscilloscope (column 19, lines 48-59), selecting a set of instructions by a user (column 15, lines 11-15, column 17, lines 30-54, and column 25, lines 46-56) to be associated with one or more processing elements of the digital oscilloscope, based upon said one or more input parameters, to enable said processing elements to carry out said instructions and perform processing on

the received input signals within the digital oscilloscope upon application of the associated processing element (column 10, lines 59-64), assigning a graphical representative for each said processing element (column 13, lines 51-67), coupling one or more of the received input signals to one or more processing element graphical representatives (column 13, lines 51-67), and connecting respective ones of said processing element graphical representatives to define and graphically depict a processing web for performing corresponding processing on said one or more received input signals within said digital oscilloscope (column 17, line 55 to column 18, line 32).

U.S. Patent No. 5,668,469 to Natori et al. teaches a digital oscilloscope using a color plane display device and data display method comprising a plurality of processing elements, including acquisition devices and display devices, (Figure 1), wherein the data read out of a display memory using a display controller is in synchronization with the other processing elements (abstract and column 4, line 42 to column 5, line 14).

U.S. Patent No. 4,072,851 to Rose teaches a waveform measuring instrument with resident programmed processor for controlled waveform display and waveform data reduction and calculation.

U.S. Patent No. 6,121,799 to Moser teaches an interleaved digital peak detector.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEFFREY R. WEST whose telephone number is (571)272-2226. The examiner can normally be reached on Monday through Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eliseo Ramos-Feliciano can be reached on (571)272-7925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jeffrey R. West/
Primary Examiner, Art Unit 2857

December 10, 2008